

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003450**Date Inspected:** 27-Jul-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wei, Ye Yong Jun**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower & OBG**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding and associated operations being performed for the Tower and Orthotropic Box Girders (OBG).

**OBG Bay 1:**

The QA Inspector randomly observed ZPMC welders Xiang Huan Feng ID Number 059416, Jiang Jie ID Number 059378, Gao Xin Dong ID Number 059361 and Jiang Ting Guang ID Number 062265, utilizing Gantry 1 mounted welding apparatus with the Gas Metal Arc Welding (GMAW) Process in the 2G (Horizontal Groove) Position with ZPMC Weld Procedure Specification (WPS) WPS-B-T-2342-U1(U-Rib)-3, to weld the root pass of the U-Ribs to 4 Rib Deck Plate Sub-Assembly 2AW-DP548-001 at Weld Joint (WJ) Numbers DP548-001-003/004(U-259) and 007/008(U-256). The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 371/368 amps, 30.4/30.6 volts (WJ's 003/004) for Mr. Xiang/Mr. Jiang; and 365/370 amps, 30.5/30.7 volts (WJ's 007/008) for Mr. Gao/Mr. Jiang with a travel speed of 534 millimeters (mm) per minute for all welders. The weld parameters appeared to comply with contract requirements.

The QA Inspector randomly observed ZPMC welders Xiang Huan Feng ID Number 059416, Jiang Jie ID Number 059378, Gao Xin Dong ID Number 059361 and Jiang Ting Guang ID Number 062265, utilizing Gantry 1 mounted welding apparatus with the GMAW Process in the 2G (Horizontal Groove) Position with ZPMC WPS WPS-B-T-2342-U1(U-Rib)-3, to weld the root pass of the U-Ribs to 4 Rib Deck Plate Sub-Assembly 2AW-DP548-001 at WJ's DP548-001-001/002(U-260) and 005/006(U-250). The QA Inspector randomly

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observed ZPMC QC monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 372/368 amps, 30.3/30.6 volts (WJ's 001/002) for Mr. Xiang/Mr. Jiang; and 371/365 amps, 30.5/30.4 volts (WJ's 005/006) for Mr. Gao/Mr. Jiang with a travel speed of 525 mm per minute for all welders. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

OBG Bay 2; No contract welding being performed.

OBG Bay 3:

The QA Inspector randomly observed a ZPMC Torch Cutting Operator utilizing a track mounted semi-automatic torch cutting apparatus to cut 35 mm thick I-Ribs from plate.

The QA Inspector randomly observed ZPMC welders Li Shu Liang ID Number 048801 and Li Zi Hong ID Number 062447, utilizing gantry mounted welding apparatus with the Flux Cored Arc Welding (FCAW) Process in the 2F (Horizontal Fillet) Position with ZPMC WPS WPS-B-T-2132-3, to weld 20 mm I-Ribs to Side Plate Sub-Assembly SP647-001. The QA Inspector randomly observed ZPMC QC monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 301/304 amps, 29.8/30.2 volts (WJ's 003/004) for Mr. Li Shu Liang; 298/303 amps, 29.7/30.4 volts (WJ 007/008) for Mr. Li Zi Hong with a travel speed of 450 mm per minute for both welders. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

OBG Bay 4:

The QA Inspector randomly observed ZPMC welder Han Kun ID Number 066751, utilizing the Flux Cored Arc Welding (FCAW) Process in the 3G (Vertical Groove) Position with ZPMC Weld Procedure Specification (WPS) WPS-B-T-2233-U3-F, to weld the butt splice of 33M Top Tower Diaphragm Flange Plate Assembly ESD1-SA322 at Weld Joint (WJ) Number SSD1-SA322-7A. The QA Inspector randomly observed ZPMC CWI Yi Yong Jun monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 214 amps, 26.1 volts with a travel speed of 117 mm per minute. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welder Shi Yan Hao ID Number 066751, utilizing the FCAW Process in the 3G (Vertical Groove) Position with ZPMC Weld Procedure Specification (WPS) WPS-B-T-2233-U3-F, to weld the butt splice of 15M Tower Diaphragm Flange Plate Assembly WSD1-SA315 at WJ Number WSD1-SA315-5A. The QA Inspector randomly observed ZPMC CWI Yi Yong Jun monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 215 amps, 26.5 volts with a travel speed of 119 mm per minute. The weld parameters appeared to comply with contract requirements.

OBG Bay 7:

The QA Inspector randomly observed ZPMC welders Li Wen Guo ID Number 066261, Bian Hong Wei ID Number 051359 and Hu Ya Cheng 049339 utilizing the Shielded Metal Arc Welding (SMAW) Process in the 2F

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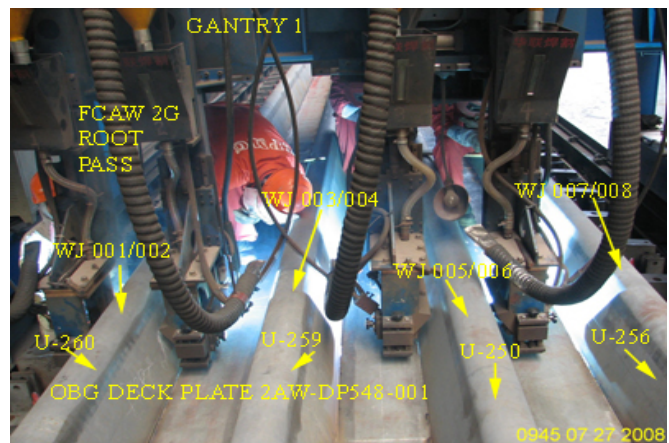
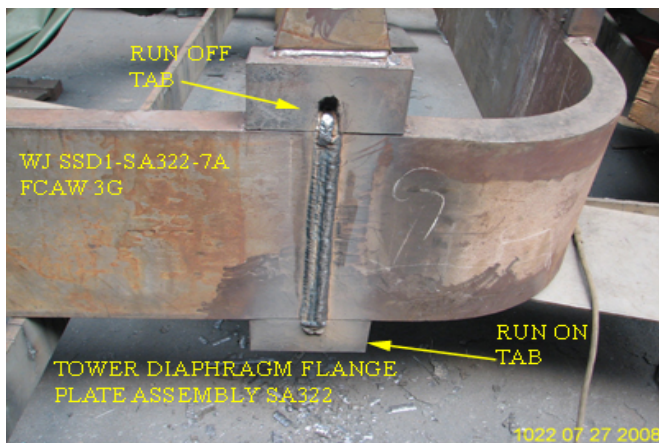
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(Horizontal Fillet) Position with ZPMC WPS WPS-B-P-2112, to weld Stiffeners piece marks X3K and X3N to Floor Beam Diaphragm Sub-Assembly FB009-001. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing monitoring weld parameters. The weld parameters appeared to comply with contract requirements. The attached photograph provides additional detail.

The QA Inspector randomly observed ZPMC welding personnel performing heat straightening operations to correct welding induced distortion per ZPMC approved HSR1(B)-1660.

Bay 8:

The QA Inspector randomly observed ZPMC welding personnel, utilizing the Carbon Air Arc Gouging Process to remove run off tabs from the ends of the welds on various Diaphragm Flange Plate Assemblies.



## Summary of Conversations:

As noted in the above body of this report.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Ady Velasco 13816942685, who represents the Office of Structural Materials for your project.

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**Inspected By:** Franco,Charlie

Quality Assurance Inspector

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**Reviewed By:** Carreon,Albert

QA Reviewer